

IN THE CLAIMS

The status of the claims is as follows:

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1. (Original) For use in a receiver, a video enhancement mechanism for enhancing video information with spatio-temporal consistency comprising:
- at least one enhancement unit enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector, each said enhanced pixel region equivalent to enhancement of said selected pixel region utilizing a respective candidate enhancement vector of enhancement algorithms; and
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- a selection unit computing an error for each said enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing said selected pixel region and with a counterpart pixel region in one or more pictures successive with said picture containing said selected pixel region, said selection unit selecting an enhanced pixel region having a best enhancement for spatio-temporal consistency.
2. (Original) The video enhancement mechanism as set forth in Claim 1 wherein said at least one candidate enhancement vector is selected from enhancement vectors determined to produce a best enhancement for spatio-temporal consistency in enhancing pixel regions within a spatial and temporal neighborhood of said selected pixel region.

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3. (Original) The video enhancement mechanism as set forth in Claim 1 wherein said bias towards spatio-temporal consistency further comprises first and second penalties, said first penalty varying based upon coefficients for each candidate enhancement vector and said second penalty varying for each candidate enhancement vector.

4. (Original) The video enhancement mechanism as set forth in Claim 3 wherein said error is computed on a per-pixel region basis for each pixel region within said video information and for each candidate enhancement vector for a respective pixel region.

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5. (Original) A high definition television receiver comprising:

a input connection receiving video information;

a display on which enhanced images derived from said video information are displayed;

and

an video enhancement mechanism for enhancing said video information with spatio-temporal consistency comprising:

at least one enhancement unit enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector, each said enhanced pixel region equivalent to enhancement of said selected pixel region utilizing a respective candidate enhancement vector of enhancement algorithms; and

a selection unit computing an error for each said enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing said selected pixel region and with a counterpart pixel region in one or more pictures successive with said picture containing said selected pixel region, said selection unit selecting an enhanced pixel region having a best enhancement for spatio-temporal consistency.

6. (Original) The receiver as set forth in Claim 5 wherein said at least one candidate enhancement vector of enhancement algorithms is selected from enhancement vectors determined to produce a best enhancement for spatio-temporal consistency in enhancing pixel regions within a spatial and temporal neighborhood of said selected pixel region.

B<sup>2</sup> 7. (Original) The receiver as set forth in Claim 5 wherein said bias towards spatio-temporal consistency further comprises first and second penalties, said first penalty varying based upon coefficients for each candidate enhancement vector and said second penalty varying for each candidate enhancement vector.

8. (Original) The receiver as set forth in Claim 6 wherein said error is computed on a per-pixel region basis for each pixel region within said video information and for each candidate enhancement vector for a respective pixel region.

9. (Original) For use in a receiver, a method of enhancing video information with spatio-temporal consistency comprising:

B<sup>2</sup> enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector, each enhanced pixel region equivalent to enhancement of the selected pixel region utilizing a respective candidate enhancement vector of enhancement algorithms;

computing an error for each enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing the selected pixel region and with a counterpart pixel region in one or more pictures successive with the picture containing the selected pixel region; and

selecting an enhanced pixel region having a best enhancement for spatio-temporal consistency.

10. (Original) The method as set forth in Claim 9 wherein the step of enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector further comprises:

B<sup>2</sup> selecting the at least one candidate enhancement vector of enhancement algorithms from enhancement vectors determined to produce a best enhancement for spatio-temporal consistency in enhancing pixel regions within a spatial and temporal neighborhood of the selected pixel region.

11. (Original) The method as set forth in Claim 9 wherein the step of computing an error for each enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing the selected pixel region and with a counterpart pixel region in one or more pictures successive with the picture containing the selected pixel region further comprises:

adding first and second penalties to the error as the bias, the first penalty varying based upon coefficients for each candidate enhancement vector and the second penalty varying for each candidate enhancement vector.

12. (Original) The method as set forth in Claim 11 wherein the step of computing an error for each enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing the selected pixel region and with a counterpart pixel region in one or more pictures successive with the picture containing the selected pixel region further comprises:

computing the error on a per-pixel region basis for each pixel region within the video information and for each candidate enhancement vector for a respective pixel region.

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13. (Original) A computer program product within a computer usable medium for enhancing video information with spatio-temporal consistency comprising:

instructions for enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector, each enhanced pixel region equivalent to enhancement of the selected pixel region utilizing a respective candidate enhancement vector of enhancement algorithms;

instructions for computing an error for each enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing the selected pixel region and with a counterpart pixel region in one or more pictures successive with the picture containing the selected pixel region; and

instructions for selecting an enhanced pixel region having a best enhancement for spatio-temporal consistency.

B<sup>2</sup> 14. (Original) The computer program product as set forth in Claim 13 wherein the instructions for enhancing a characteristic other than position of a selected pixel region of video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate an enhanced pixel region for each candidate enhancement vector further comprise:

instructions for selecting the at least one candidate enhancement vector of enhancement algorithms from enhancement vectors determined to produce a best enhancement for spatio-temporal consistency in enhancing pixel regions within a spatial and temporal neighborhood of the selected pixel region.



15. (Original) The computer program product as set forth in Claim 14 wherein the instructions for computing an error for each enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing the selected pixel region and with a counterpart pixel region in one or more pictures successive with the picture containing the selected pixel region further comprise:

B<sup>2</sup> instructions for adding first and second penalties to the error as the bias, the first penalty varying based upon coefficients for each candidate enhancement vector and the second penalty varying for each candidate enhancement vector.

16. (Original) The computer program product as set forth in Claim 15 wherein the instructions for computing an error for each enhanced pixel region utilizing a bias towards spatio-temporal consistency of a respective enhanced pixel region with spatially adjacent pixel regions in a picture containing the selected pixel region and with a counterpart pixel region in one or more pictures successive with the picture containing the selected pixel region further comprise:

instructions for computing the error on a per-pixel region basis for each pixel region within the video information and for each candidate enhancement vector for a respective pixel region.

17. (Original) A video information signal comprising:

a data stream containing one or more pictures; and

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at least one enhanced pixel region within at least one of said pictures, each enhanced pixel region derived from received video information by enhancing a characteristic other than position of a selected pixel region of said received video information utilizing at least one candidate enhancement vector of enhancement algorithms to generate a candidate enhanced pixel region for each candidate enhancement vector, each candidate enhanced pixel region equivalent to enhancement of said selected pixel region utilizing a respective candidate enhancement vector of enhancement algorithms,

wherein each enhanced pixel region within a respective picture has a best enhancement for spatio-temporal consistency among said candidate enhanced pixel regions for an error utilizing a bias towards spatio-temporal consistency of said respective enhanced pixel region with spatially adjacent pixel regions in a picture containing said selected pixel region and with a counterpart pixel region in one or more pictures successive with said picture containing said selected pixel region.

18. (Original) The video information signal as set forth in Claim 17 wherein said at least one candidate enhancement vector is selected from enhancement vectors determined to produce a smallest computed error value in enhancing pixel regions within a spatial and temporal neighborhood of said selected pixel region.

B<sup>2</sup> 19. (Original) The video information signal as set forth in Claim 17 wherein said bias towards spatio-temporal consistency comprises first and second penalties, said first penalty varying based upon coefficients for each candidate enhancement vector and said second penalty varying for each candidate enhancement vector.

20. (Original) The video information signal as set forth in Claim 19 wherein each said enhanced pixel region within any picture is selected utilizing said error computed on a per-pixel region basis for each pixel region within said received video information and for each candidate enhancement vector for a respective pixel region.

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